

Sequence Listing

SEQ ID NO. 1 - The full-length nucleotide sequence of the spike (S) gene of SARS CoV, clone 12 of 2774 strain
RNA linear

ORGANISM: SARS coronavirus 2774 strain

Viruses; ssRNA positive-strand viruses, no DNA stage;
Nidovirales; Coronaviridae; Coronavirus.

1 atgtttatattt tccttattttt tccttactctc acttagtgta gtgacccctga ccgggtgcacc
acttttgcgtg 70 71 atgttcaagc tccttaattac actcaacata cttcatctat gagggggggtt
tactatcctg atgaaatattt 140 141 tagatcagac actctttatt taactcagga tttatctctt
ccatTTTattt ctaatgttac agggtttcat 210 221 actattaatc atacgtttgg caaccctgtc
atacctttta aggtatggat ttatTTTgtc gcccacagaga 280 281 aatcaaatgt tggccgtgg
tgggtttttt gttctaccat gaacaacaag tcacagtcgg tgattattat 350 351 taacaattct
actaatgttg ttatacggc atgttaactttt gaattgtgtg acaacccttt ctttgcgttt 420 421
tctaaaccca tgggtacaca gacacatact atgatattcg ataatgcatt taattgcact ttccgagttaca
490 491 tatctgatgc cttttcgctt gatgtttcag aaaagtccagg taattttaaa cacttacgag
agtttgcgtt 560 561 taaaaataaa gatgggtttc tctatgttta taagggttat caacctatag
atgttagttcg tgatctacct 630 631 tctggTTTtaa acactttgaa acctattttt aagttgcctc
ttggattttaa cattacaaat tttagagcca 700 701 ttcttacagc cttttcacct gctcaagaca
tttggggcac gtcagctgca gccttattttt ttggcgattt 770 771 aaagccaaact acatTTatgc
tcaagtatga taaaaatgtt acaatcacag atgtgttgc ttgttctcaa 840 841 aatccacttg
ctgaactcaa atgctctgtt aagagctttg agattgacaa aggaattttac cagacctcta 910 911
atttcagggt tgTTccctca ggagatgttg tgagattccc taatattaca aacttgcgtc cttttggaga
980
981 ggTTTTtaat gctactaaat tcccttctgt ctatgcatttgg gagagaaaaaa aaatttctaa
ttgtgttgct 1050 1051 gattactctg tgctctacaa ctcaacagtt ttttcaacact ttaagtgcata
tgcgtttct gccactaagt 1120 1121 tgaatgtatct ttgcttctcc aatgtctatg cagattctt
tgttagtcaag ggagatgtatg taagacaaat 1190 1191 agcggccagga caaaactgggt ttattgcgt
ttataattat aaattgcacatg atgatttcat ggggtgtc 1260 1261 cttgcgttggaa atactaggaa
cattgtatgc acttcaactg gtaattataa ttataaaat aggtatctta 1330 1331 gacatggcaa
gcttagggccc tttgagagag acatatctaa tgcgttgcgttgc tccctgtatg gcaaaaccttgc 1400 1401
caccccacct gctttaattt gttattggcc attaaatgtat tatggTTTTt acaccactac tggcattggc
1470 1471 taccaacctt acagagttgt agtactttct tttgaactttt taaatgcacc gggccacgggt
tgtggaccaa 1540 1541 aattatccac tgaccttattt aagaaccagt gtgtcaattt taattttat
ggactcaactg gtactgggt 1610 1611 gttaactcct tcttcaaaaga gatttcaacc attcaacaa
tttggccgtg atgtttctga ttctactgat 1680 1681 tccgttgcag atcctaaac atctgaaata
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catgcagatc aactcacacc agcttggcgc atataattctta ctggaaacaaat ttttgcgttgc 1890 1891
actcaaggcag gctgtcttattt aggagctgag catgtcgaca cttcttgcgttgc 1960 1961 ctggcatttgc
ttgtggctta 2030 2031 tactatgtct ttaggtgtc atagttcaat tgcttactct aataacacca
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tgcttctcca atatggtagc ttttgcacac aactaaatcg 2240 2241 tgcactctca ggtattgcgt
ctgaacagga tcgcaacaca cgtgaagtgt tcgctcaagt taaacaaatgc 2310 2311 tacaacaccc

caactttgaa atattttgtt ggtttaatt tttcacaaat attacctgac cctctaaagc 2380 2381
 caactaagag gtctttatt gaggacttgc tctttaataa ggtgacactc gctgatgctg gcttcatgaa
 2450 2451 gcaatatggc gaatgcctag gtgatattaa tgcttagat ctcatttgtg cgccagaagtt
 caatggactt 2520 2521 acagtggtgc cacctctgt cactgatgat atgattgctg cctacactgc
 tgctctagtt agtggactg 2590 2591 ccactgctgg atggacattt ggtgctggcg ctgctttca
 aataccctt gctatgcaaa tggcatatag 2660
 2661 gttcaatggc attggagttt cccaaaatgt tctctatgag aacccaaaaac aaatcgccaa
 ccaatttaac 2730 2731 aaggcgatttca gtcaatttca agaatcactt acaacaacat caactgcatt
 gggcaagctg caagacgtt 2800 2801 ttaaccagaa tgctcaagca ttaaaccacac ttgttaaaca
 acttagctt aatttttgtt caatttcaag 2870 2871 tggctaaat gatatcctt cgccacttga
 taaagtgcag gccggaggtaa atttgcacag gttaattaca 2940 2941 ggcagacttc aaagccttca
 aacctatgtt acacaacaac taatcagggc tgctgaaatc agggcttctg 3010 3011 ctaatcttgc
 tgctactaaa atgtctgatg tggcttcttgg acaatcaaaa agagttact ttttgaaaa 3080 3081
 gggctaccac cttatgtcct tccacaaagc agccccgcat ggtggtgtct tcctacatgt cacgtatgc
 3150 3151 ccattccagg agaggaactt caccacagcg ccagcaattt gtcatgaagg caaagcatac
 ttccctcg 3220 3221 aagggttttt tggcttaat ggcacttctt ggttattac acagaggaac
 ttctttctc cacaataat 3290 3291 tactacagac aatacatttgc tctcaggaaa ttgtgatgtc
 gttattggca tcattaacaa cacagtttat 3360 3361 gatcctctgc aacctgagct tgactcattc
 aaagaagagc tggacaagta cttcaaaaat catacatcac 3430 3431 cagatgttgc tcttggcgac
 atttcaggca ttaacgcttgc tggctcaac attcaaaaag aaattgaccg 3500 3501 cctcaatgag
 gtcgctaaaa atttaaatgatcactcattt gacccatcaag aattggaaa atatgagcaa 3570 3571
 tatattaaat ggccttggta tggcttggctc ggcttcattt gggactaat tgccatcgatc atggttacaa
 3640 3641 tcttgctttt tggcatgact agtggtgca gttgcctcaa gggtgcattgc tcttgggtt
 cttgctgca 3710 3711 gtttgatgag gatgactctg agccagttct caagggtgtc aaattacatt
 acaca 3765

SEQ ID NO. 2 - The full-length amino acid sequence of the spike (S)
 gene of SARS CoV, clone 12 of 2774 strain
 Amino acid

1 MFIFLLFLTL TSGSDLDRCT TFDDVQAPNY TQHTSSMRGV YYPDEIFRSD TLYLTQDLSL
 PFYSNVTGFH 70
 71 TINHTFGNPV IPFKDGIYFA ATEKSNVVRG WVFGSTMNNK SQSVIIINNS TNVVIRACNF
 ELCDNPFFAV 140
 141 SKPMGTQHT MIFDNAFNCT FEYISDAFSL DVSEKSGNFK HLREFVFKNK DGFLYVYKGY
 QPIDVVVRDLP 210
 211 SGFNTLKP IFLPLGINITN FRAILTAFSP AQDIWGTSA AYFVGDLKPT TFMLKYDENG
 TITDAVDCSQ 280
 281 NPLAELKCSV KSFEIDKGIY QTSNFRVVPS GDVVRFPNIT NLCPFGEVFN ATKFPSVYAW
 ERKKISNCVA 350 351 DYSVLYNSTV FSTFKCYGVS ATKLNDLCFS NVYADSFVVK GDDVRQIAPG
 QTGVIADYNY KLPDDFMGCV 420 421 LAWNTRNIDA TSTGNYNYKY RYLRHKGKLRP FERDISNVPF
 SPDGKPCTPP ALNCYWPPLND YGFYTTTGIG 490 491 YQPYRVVVLS FELLNAPATV CGPKLSTD
 KNQCVNFNFN GLTGTGVLT PSSKRFQPFQQ FGRDVSDFD 560 561 SVRDPKTSEI LDISPCSF
 VSVITPGTNA SSEVAVLYQD VNCTDVSTAI HADQLTPAWR IYSTGNVNFQ 630 631 TQAGCLIGAE
 HVDTSYEC DI PIGAGICASY HTVSLLRSTS QKSIVAYTMS LGADSSIAYS NNTIAIPTNF 700 701
 SISITTEVMP VSMAKTSVDC NMYICGDSTE CANLLLQYGS FCTQLNRALS GIAAEQDRNT REVFAQVKQM
 770 771 YKPTPLKYFG GFNFSQLPD PLKPTKRSFI EDLLFNKVTI ADAGFMKQYG ECLGDINARD

LICAQKFNGL 840 841 TVLPPLLTDD MIAAYTAALV SGTATAGWTF GAGAALQIPF AMQMAYRFNG
 IGVTNQVLYE NQKQIANQFN 910 911 KAISQIQESL TTTSTALGKL QDVVNQNAQA LNTLVQQLSS
 NFGAISSV рн DILSRLDKVE AEVQIDRLIT 980 981 GRLQSLQTYV TQQLIRAAEI RASANLAATK
 MSECVLGQSK RVDFCGKGYH LMSFPEQAAAPH GVVFV рн HTSPDV рн DCDV VIGIINNTVY 1120
 1121 DPLQPELDSF KEELDKYFKN HTSPDV рн DCDV ISGINASV рн VAKNLNESLI
 DLQELGKYEQ 1190 1191 YIKWPWV рн WL GFIAGLIAIV MVTILLCCMT SCCSCLKGAC SCGSCCKFDE
 DDSEPVLKGV KLHYT 1255

SEQ ID NO. 3 - The nucleotide sequence of S_A10 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

3087 taccaccta tgccttccc acaaggcagcc cccatgggt ttgtcttccat acatgtcacg
 tatgcgccat 3157 3158 cccaggagag gaacttcacc acagcggccag caatttgcata tgaaggcaaa
 gcatacttcc ctcgtgaagg 3227 3228 tggtttgtt ttaatggca cttctgggtt tattacacag
 aggaacttctt tttctccaca aataattact 3297 3298 acagacaata catttgcata aggaaattgt
 gatgtcgta ttggcatcat taacaacaca gtttatgatc 3367 3368 ctctgcaacc tgagcttgc
 tcattcaaag aagagctgga caagtacttc aaaaatcata catcaccaga 3437 3438 tgttgatctt
 ggcgacattt caggcattaa cgcttctgatc gtcaacattc aaaaagaaat tgaccgcctc 3507 3508
 aatgaggtcg ctaaaaattt aaatgaatca ctcattgacc ttcaagaatt gggaaaat gggaaatata
 3577
 3578 tta
 3581

SEQ ID NO. 4 - The amino acid sequence of S_A10 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1029 YHLMSFPQAA PHGVVFLHVT YAPSQERNFT TAPAINCHEGK AYFPREGV рн FNGTSWFITQ
 RNFFSPQIIT 1099 1100 TDNTFVSGNC DVVIGIINNT VYDPLQPELDSF KEELDKYF KNHTSPDV рн
 DDISGINASV VNIQKEIDRL 1169 1170 NEVAKNLNES LIDLQELGKY EQYI
 1192

SEQ ID NO. 5 - The amino acid sequence of the neutralizing fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1055 RNFT TAPAINCHEGK AYFPREGV рн FNGTSWFITQ RNFFSPQIIT TDNTFVSGNC DVVIGIINNT
 VYDPLQ 1620 1621 PELDSFKEELDKYF KNHTSPDV рн DDISGINASV VNIQKEIDRL NEVAKNLNES
 LIDLQELGKY EQYI 1192

SEQ ID NO. 6 - The amino acid sequence of S_A11 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1 MFIFLFLTL TSGSDLDRCT TFDDVQAPNY TQHTSSMRGV YYPDEIFRSD TLYLTQDLSL
 PFYSNVTGFH 70
 71 TINHTFGNPV IPFKDGIYFA ATEKSNVVRG WVFGSTMNNK SQSIIINNS TNVVIRACNF
 ELCDNPFFAV 140
 141 SKPMGTQTHT MIFDNAFNCT FEYISDAFSL DVSEKSGNFK HLREFV рн FKNK DGFLYV рн YKGY
 QPIDVV рн RDLP 210

211 SGFNTLKPIF KPLGINITN FRAILTAFSP AQDIWGTSA AYFVGDLKPT TFMLKYDENG
TITDAVDCSQ 280
281 NPLAELKCSV KSFEIDKGIY QTSNFRVVPS GDVVRFPNIT NLCPFGEVFN ATKFPsvYAW
ERKKISNCVA 350 351 DYSVLYNSTV FSTFKCYGVS ATKLNLDLCEs NVYADSFVVK GDDVRQIAPG
QTGVIADYNY KLPDDFMGCV 420 421 LAWNTRNIDA TSTGNYNYKY RYLRHGKLRP FERDISNVPF
SPDGKPCTPP ALNCYWPLND YGFYTTTGIG 490 491 YQPYRVVVLS FELLNAPATV CGPKLSTDLI
KNQCVNFNFN GLTGTGVLTP SSKRFQPFQQ FGRDVSDFTD 560 561 SVRDPKTSEI LDISPCSFGGG
VSVITPGTNA SSEVAVLYQD VNCTDVSTAI HADQLTPAWR IYSTGNVVFQ 630 631 TQAGCLIGAE
HVDTSYECDI PIGAGICASy HTVSLLRSTS QKSIVAYTMS LGADSSIAyS NNTIAIPTNF 700 701
SISITTEVMP VSMAKTSVDC NMYICGDSTE CANLLQYGS FCTQLNALS GIAAEQDRNT REVFAQVKQM
770 771 YKTPTLKYFG GFNFSQILPD PLKPTKRSFI EDLLFNKVTL ADAGFMKQYG ECLGDINARD
LICAQKFNGL 840 841 TVLPPLLTDD MIAAYTAALV SGTATAGWTF GAGAALQIPF AMQMAYRFNG
IGVTQNVLYE NQKQIANQFN 910 911 KAISQIQESL TTTSTALGKL QDVVNQNAQA LNTLVKQLSS
NFGAISSVNL DILSRLDKVE AEVQIDRLIT 980 981 GRLQSLQTYV TQQLIRAAEI RASANLAATK
MSECVLGQSK RVDFCGKGYH LMSFPQAAPH GVVFLHVTYA 1050 1051 PSQERNFTTA PAICHEGKAY
FPREGVFVFN GTSWFITQRN FFSPQIITTD NTFVSGNCDV VIGIINNTVY 1120
1121 DPLQPELDSF KE

1132